

# The ADVENTURES OF ZACK & MAX

VOLUME 7

**Ham Radio  
To The Rescue!**



National  
Preparedness  
Month

"Preparing  
a Kit  
Be  
Sense!"  
a  
ed

ICOM®





# Family Emergency Preparedness List

**Get A Kit!**

**Make A Plan!**

**Be Informed!**



## List of Essentials

- Water, 1 gallon per person per day for at least 3 days
- Food, at least 3 day supply of non-perishable food
- Battery-powered or hand crank radio and a NOAA weather radio with tone alert
- Flashlight
- Extra batteries
- First aid kit and any medications your family may need
- Whistle, to signal for help
- Dust masks, plastic sheeting and duct tape
- Moist towelettes, garbage bags and plastic ties for personal sanitation
- Wrench or pliers, to turn off utilities
- Can opener
- Local maps
- Cell phone with chargers, inverter or solar charger
- And don't forget your ham radios!

For more information: <http://www.ready.gov/america/getakit/index.html>

## Acknowledgements

Volume 7 of “The Adventures of Zack and Max” takes us on a local emergency communications drill. Community service is an important part of ham radio. Preparing for an emergency is necessary, but it can also be fun!

Icom America extends its appreciation to the many younger members of the Lake Washington Ham Club (K7LWH) in Kirkland, Washington, and to the club's leaders and supporters – especially Dave Condon (K17YP), John Schurman (AA7UJ), and Conrad Thompson (N7DUO).

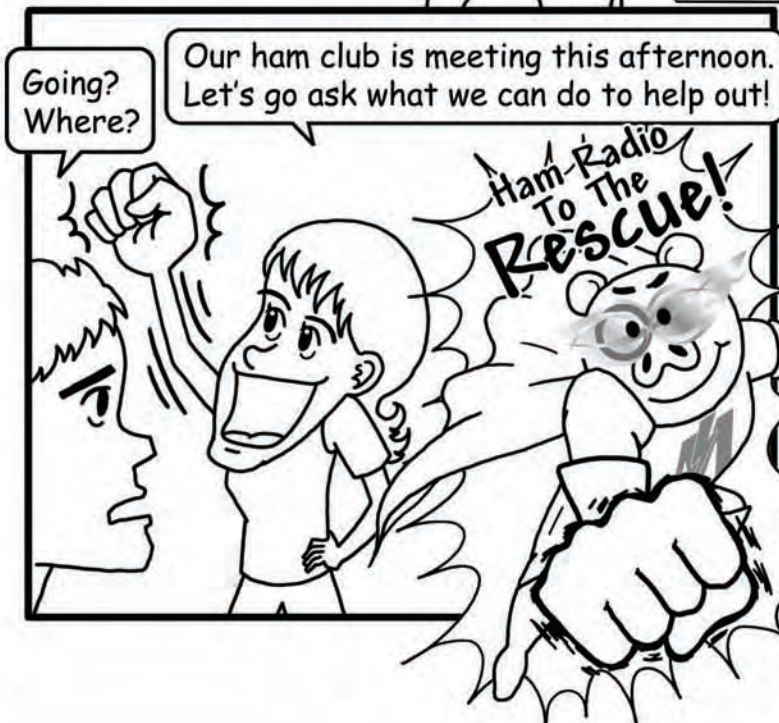
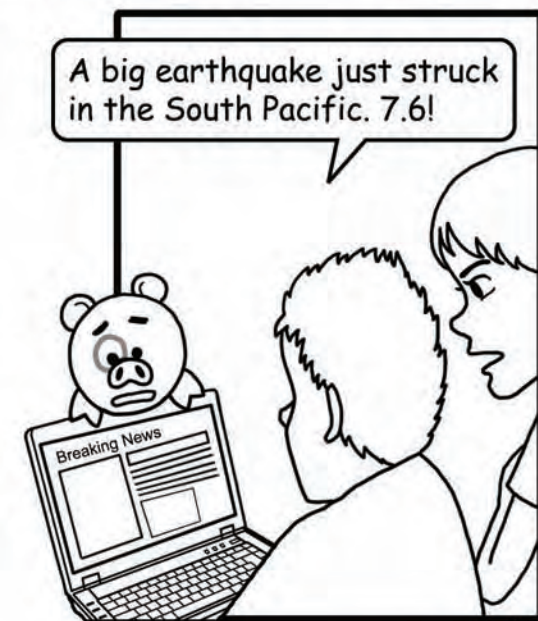
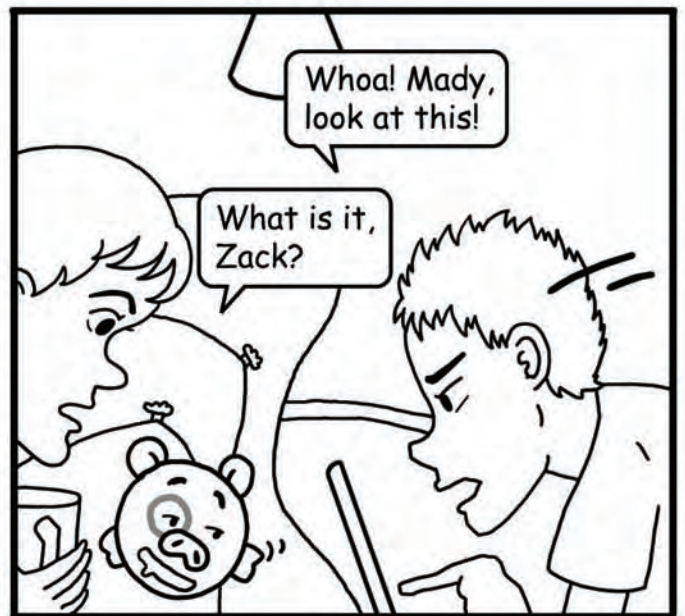
A big thanks also goes to Dan Smith (KK7DS), creator of the D-RATS software. Dan gave plenty of input, supplied many screen captures, and allowed the use of his software's name. Plus, he's made this ideal-for-emergency-communications software tool.

Kayoko Nakajima, an amazingly talented cartoonist, once again brought Zack, Max and all the other characters to life. Thank you!

And finally, thanks to all those at Icom America who lent their call signs, time and skills to help create this comic book. A special thanks to Dave Kruzic (KC7SFN) whose support and guidance throughout this series inspired us all, and to Ray Novak (N9JA) and Maureen Blomgren (KD7QEZ).







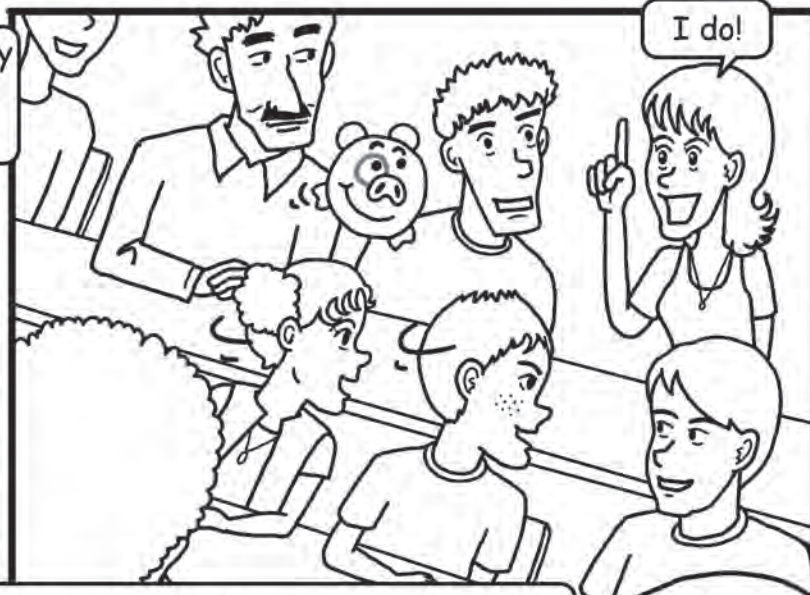
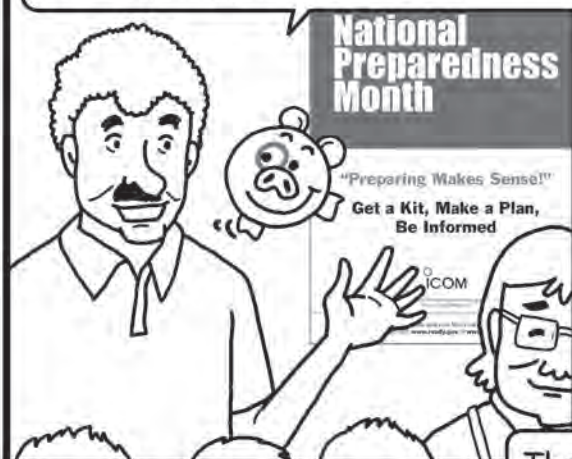


## At The Meeting



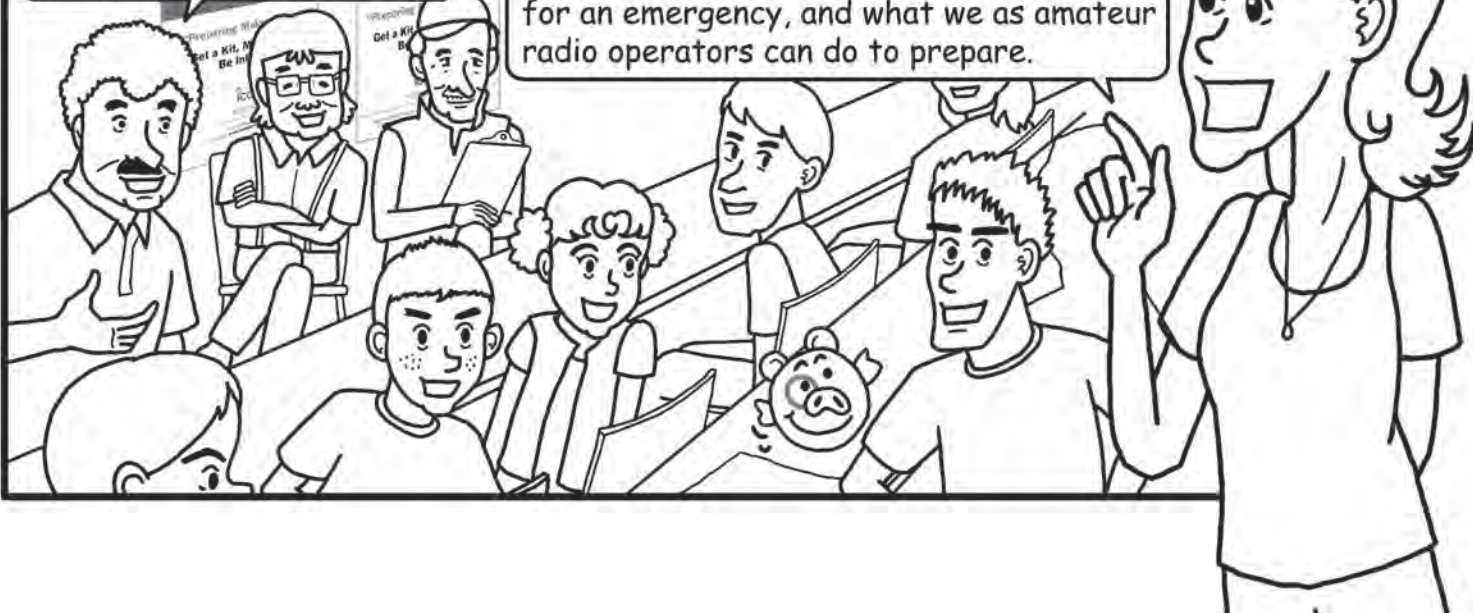
## Later

...and now the meeting is ready to turn to new business. Does anyone have anything new to discuss?"



Go ahead, Mady. Please let others know your callsign before proceeding.

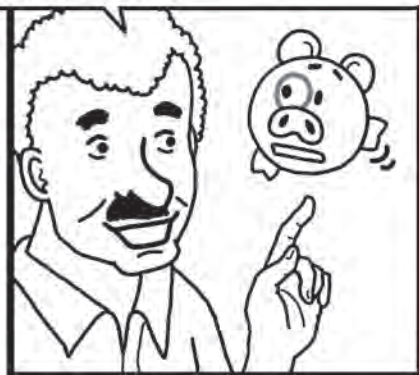
Thank you, Mr. Speaker. I'm Mady, N9JA. Today a large earthquake struck in the South Pacific. We were wondering if our community is as prepared as it could be for an emergency, and what we as amateur radio operators can do to prepare.







There are emergency agencies standing by ready to assist if disaster strikes. And we, as ham radio operators, are ready to assist them.



Hams have the radios and know-how to communicate across town, state, or even around the world!



We are scheduling a mock disaster for our next club meeting. We'll practice how we interact with the first responder community and with hams from other areas.



For now, remember to make your own homes emergency ready. You'll see on today's meeting handout what items to have at home in your emergency kits.



Can you come over to my house after the meeting to help me get things organized and ready for our mock disaster?

Sure! I can just imagine you getting organized. It will be fun to see that happen!







Oh, never mind. Think your family is ready in case there's an emergency?

I think we're like everyone else - in denial that an emergency can happen here. But that ENDS TODAY! We're GETTING READY!

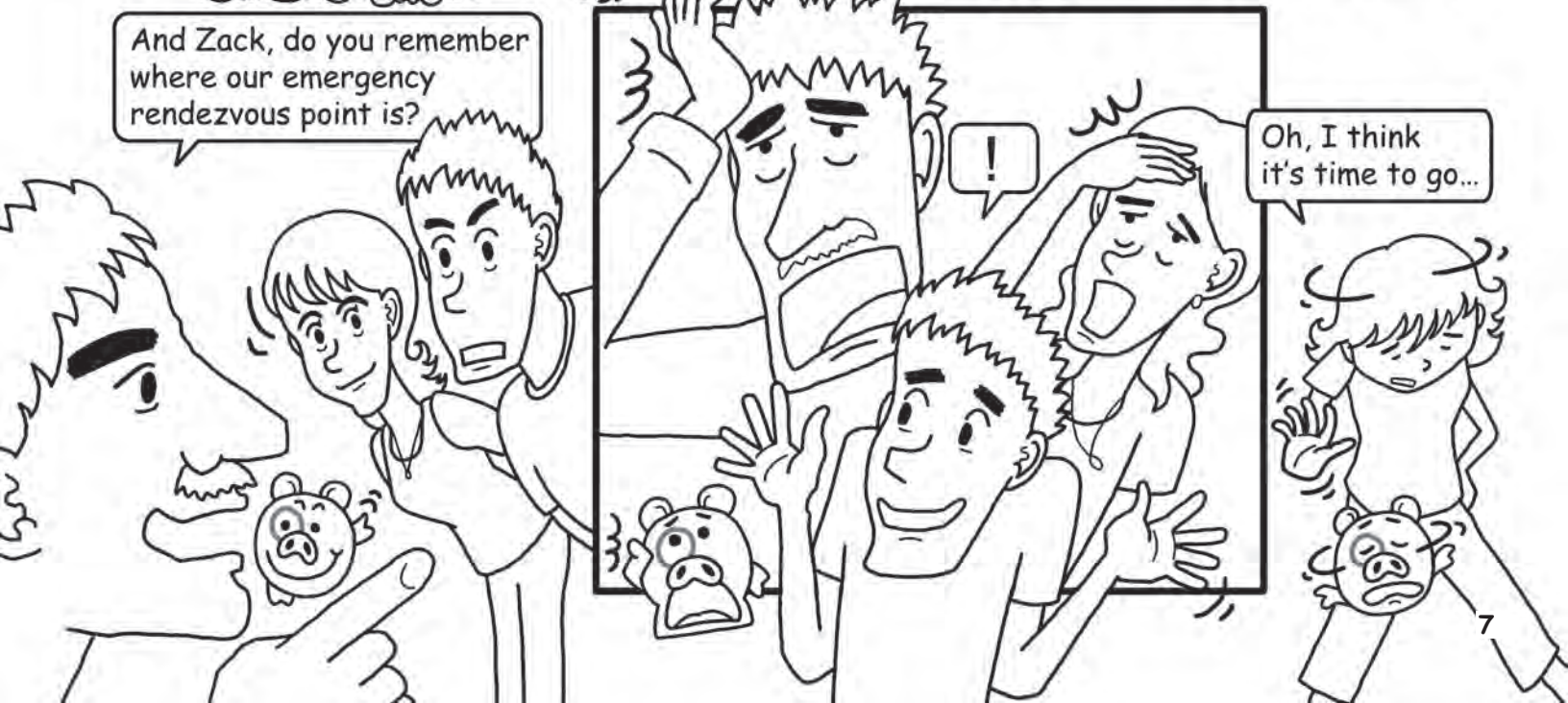
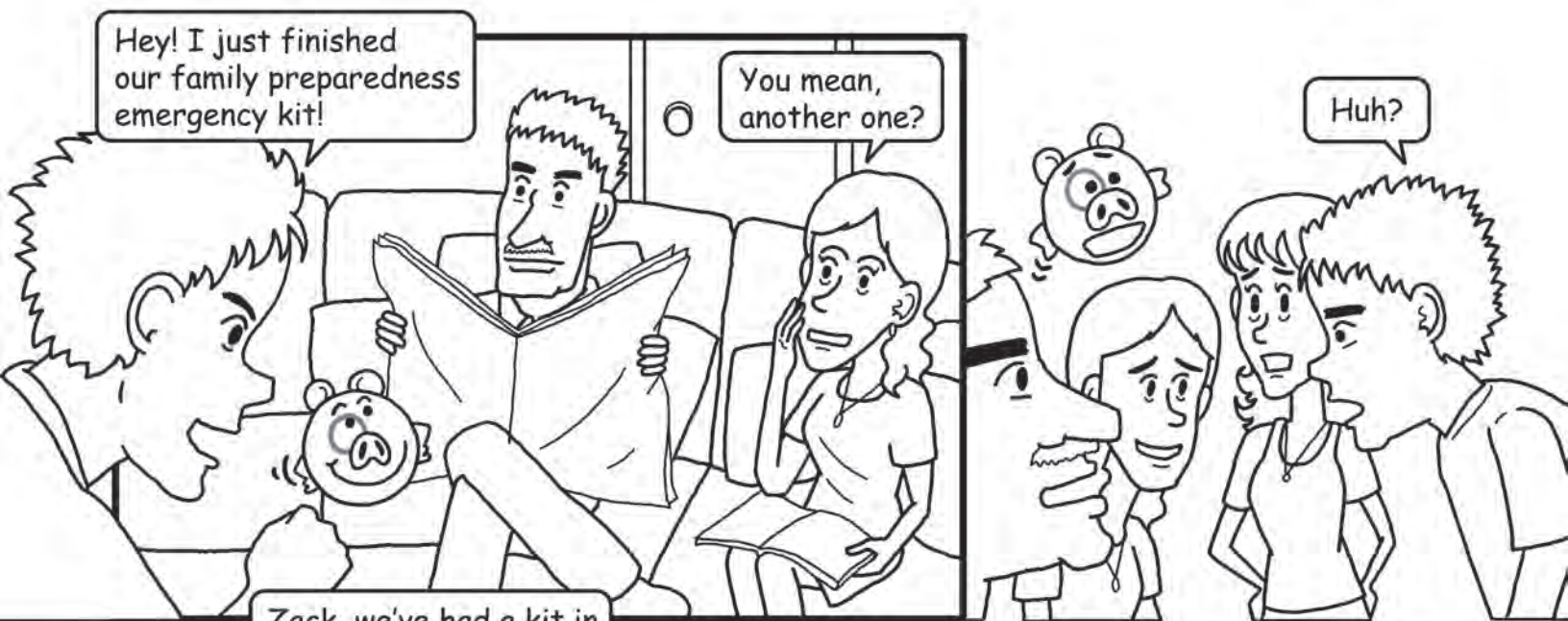
THERE! Everything we need for our 3 day emergency preparedness kit is ready! Canned food, bottled water, flashlights, first aid kit, AM/FM radio, batteries, ham radio....

Now I'm off to talk with mom and dad about our family communication plan!

I don't know how...he does it....

Are those chocolate bars?







Wow, I never realized my parents were so organized.

Shocker. Say, Zack if a disaster strikes, how will WE get in touch?

Fire up the ol' 2-meter ham radio handheld of course! We could use our cell phones, but the service will probably be very busy—if its working at all!

Our usual frequency?

See you. I'm going home and make sure my family is also emergency ready.

Good plan! Don't forget, a month from today we've got our mock disaster drill!

Yep! 145.49 MHz

I'll be there~!  
**Ready to Help!**

### One Month Later, The Night Before The Disaster Drill



**Warning!**

Due to an earlier earthquake,  
a Tsunami Warning has  
been issued!  
Please stand by for  
further updates.  
Get to higher ground or  
shelters right away!



Hurry everyone!  
Get your stuff!  
Let's go! Mady,  
Get the radios!"



What about those people  
out there on the raft?  
Who'll save them?



Yay! Yay! Max,  
you're our hero!

Zack, this is N9JA,  
we're moving inland  
now. Are you OK?



I can't get a UHF  
message out to more  
people because of  
our remote location.  
If only I had access  
to a repeater...



pork bounce comms

Yay, Max,  
we're getting through!  
Good Job!

**Hooray!**





Sweet setup!

It's a world-wide HF set up in case of a major disaster.

I'm ready for anything...including chocolate!

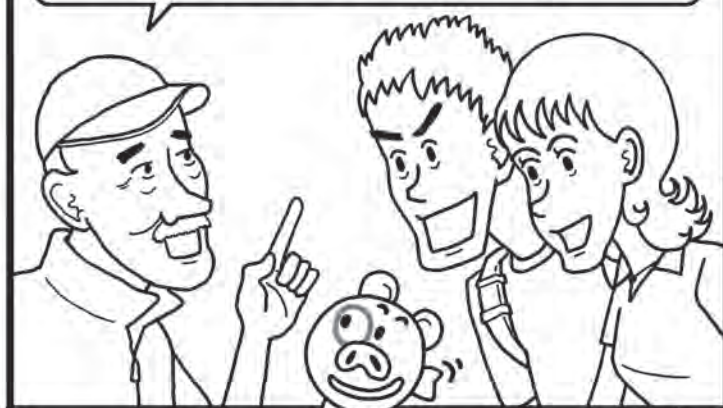


Yup, HF! You never know how big an area will be hit. Remember Hurricane Katrina affected over a dozen states!

Amateur radio is used locally, regionally and internationally.



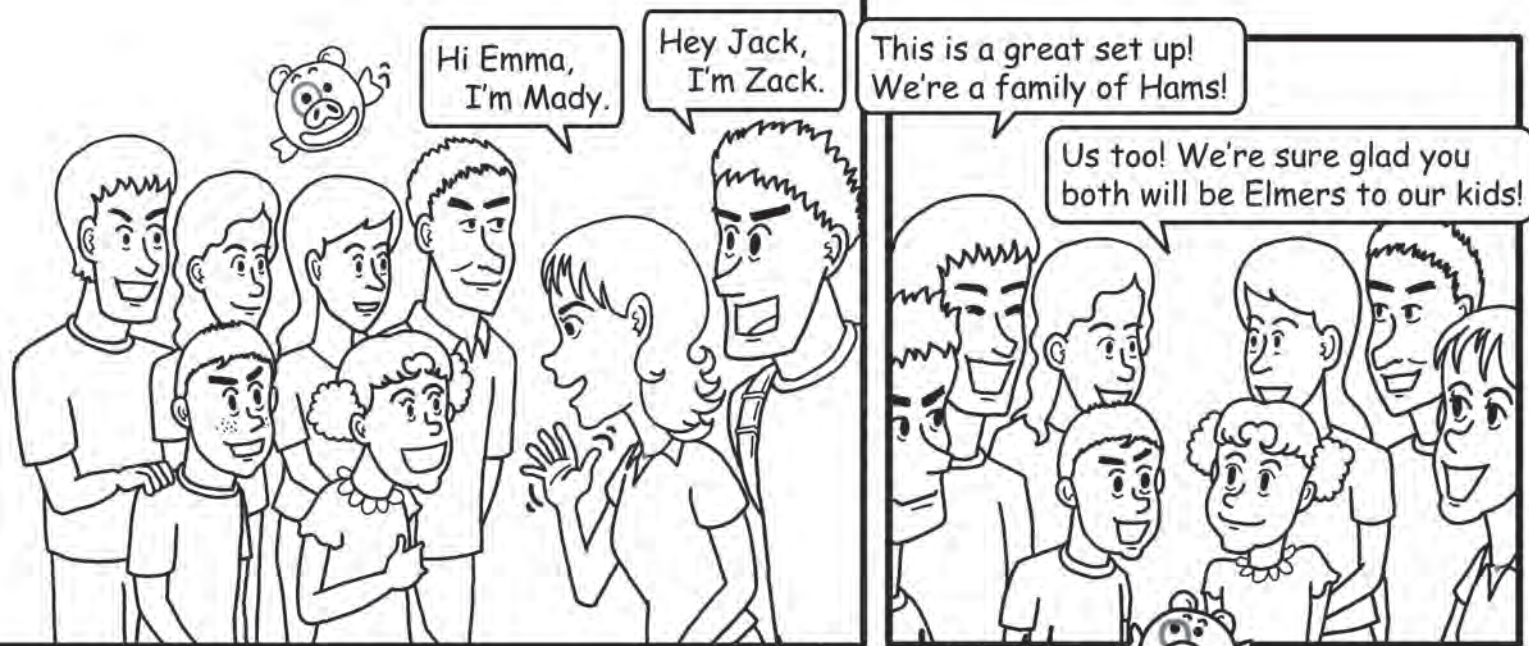
We will use a buddy system today. You will work with your buddy at the stations. Don't forget to be a good Elmer\*. I'm sespecially talking to you two: Zack and Mady!



Zack, I'm pairing you with Jack. Mady, you'll help Emma. They're right here with their parents.











Welcome! I'm John, AA7UJ and your leader for today's drill. I'm a member of ARES\* where we work together with the local government to help maintain communications in case of disaster.

Let's break up into teams. Some of the radio stations are already set up.

But as part of the drill, some stations will be setting up from scratch to give us even more practice.

Remember, in a real emergency the power grid may fail. We create our own power right here from these generators, batteries and solar panels. Remember during set up, SAFETY FIRST!

Whoa! I want to do that!

OK...

I've got great news. We're with a team that is going to start from scratch. We're at Station #5.

Where did you get that?!

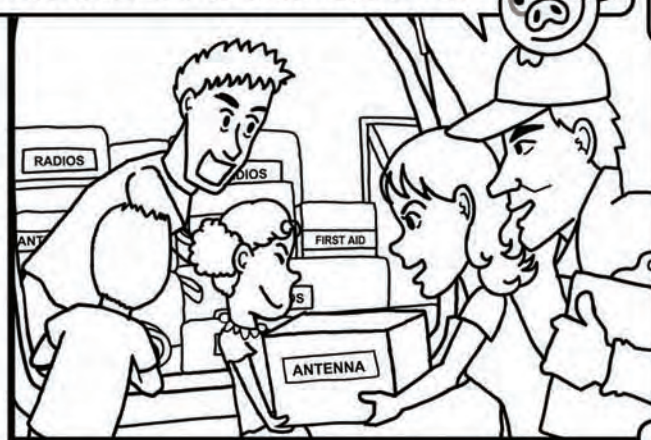
Get ready!  
You should be  
up and running  
in 15 minutes!

\*ARES stands for Amateur Radio Emergency Services. Local ARES branches specifically handle field communications, particularly during emergencies. ARES volunteers offer community services that polish their emergency communication skills.





Zack, I want you to pull out the dual band 2M/70CM vertical antenna. Everything is clearly marked. Mady, Emma and Jack, help Zack set up the antenna over here where it is clear and level.



Take the longer poles and snap them together. They form your mast. Then attach this antenna piece I have here to the mast. This cable will run down inside the tubing... Then, we'll attach everything to the base.



Yes! In the bag there are guy wires, spikes and hammers. We've got to set up and get on the air fast, and then we'll improve the site later.

That was easy! We've got the mast and antenna connected!

I think we're ready for the radials now...





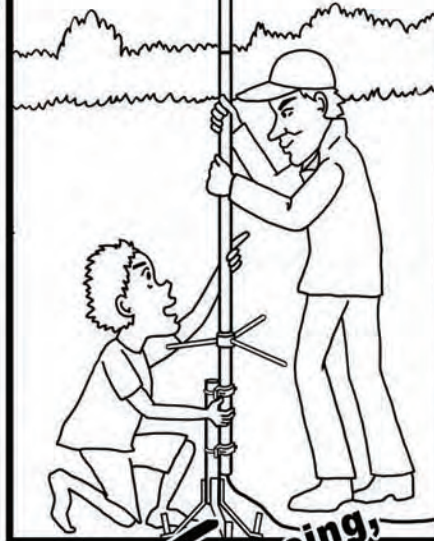
All right everyone, bring that mast over and let's get it into place and clamp it to the base. Then we'll secure it all with the guy wires.



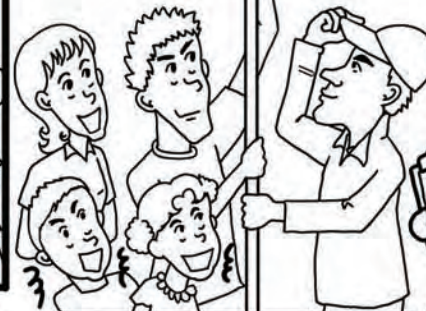
That's right, Mady, the best set ups happen when you are prepared. All equipment should be in good working order and well labeled.



Make sure the cable is laid on the ground right to the radio....



Keep it going, everyone! We're on the air in 5 minutes!



Good, Jack! This one plugs in right here in the back....



Great! Now, let's get the extra coaxial cables out! They are all labeled as to what goes where.



So you have all of your equipment marked and ready.

I see a small table in the back of the van, do you want that next?



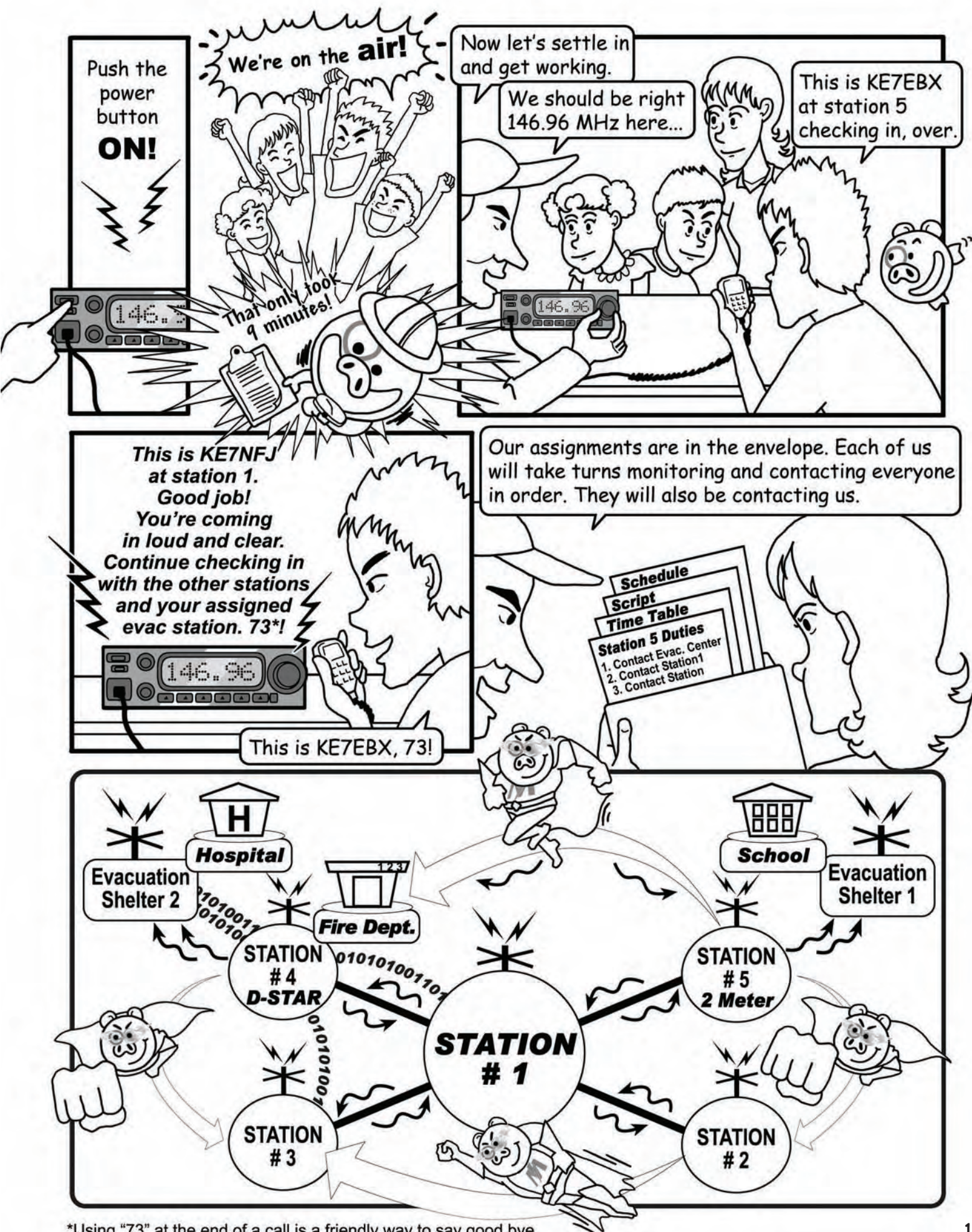
Yes, please, get the table out and get the radios out too!

And here's the power cord! I had it all preset and ready to go!

And guess what's next?







\*Using "73" at the end of a call is a friendly way to say good bye.



Emma, we have a script here to help you along. Use your strong, clear voice. I'll help you practice.

I'm going to help her get on the air!

Zack, my laptop is on the front seat of the van, please go get it. We'll keep monitoring.

...and listen to how we handle it and you'll do fine.

Sure! Come on, Jack, let's get the PC set up.

Now Emma, I'm going to call the evacuation center and let them know we are set up...listen carefully.

This is KE7LYK calling Central Evacuation Center; this is station 5 with the City Emergency Drill...over.

I'm ready.

Station 5, this is KDYQDZ Central Evac Center. Your signal is coming in clear, over.

Go Emma!

Loud and clear!

You're loud and clear here. Do you have any priority messages at this time? Over.

We'll be checking back throughout the day for status updates, over.

...And you will be talking today with our younger hams too, over.

Roger that, over.

No priority messages at this time. CERT\* volunteers are all in place, over.

That's what it's all about; include everyone in the community in this drill.

\*CERT: Community Emergency Response Team



Thanks so much we'll be checking back later. This is KE7LYK signing off for now, 73.

Emma, you and I will do the next call...

And we'll practice while Zack and Jack help set up your computer!

Did you miss us?

And we'll be ready!

We're back! Got everything!

**This is KD7QDZ. 73's to your team.**

OK, set the laptop up over here. Emma and I are going to practice getting more confidence talking on the air. Come on, Em!

COMPUTER

RADIOS

OK, all set here!

She's ready!

I'm exhausted!

CQ CQ. This is KD7QEQ calling Central Evac Center. Again, this is Station 5 at the City Emergency Drill calling, over.

**This is KD7QDZ calling KD7QEQ, You're coming in loud and clear. Over!**

146.96



Do you have a station update for us? Over.

Yes, Station 5 at 10:00 ten-hundred hours our entire CERT personnel are here, and blankets for 20, cots for 10. More are coming. No calls yet from police or fire, over.

Yes, to repeat: your CERT people are there. Blankets for 20, cots for 10, more coming, no police or fire calls, over.

That's right, over.

This is KD7QEQ at Station 5, monitoring, 73!"

Wow!  
Just like a pro!

Now that you've done the first call and helped out.... would you guys like to go over to the D-STAR station and see how they're doing? I have another group that can come in and take your place.

That's digital radio guys, let's go!

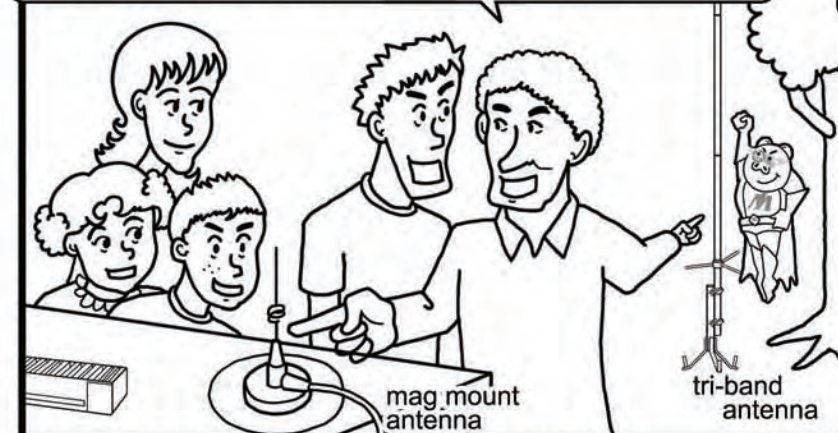
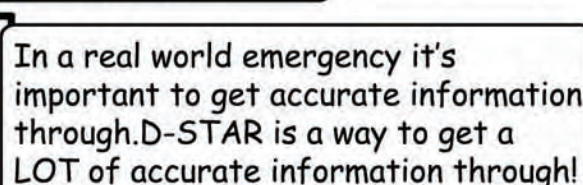
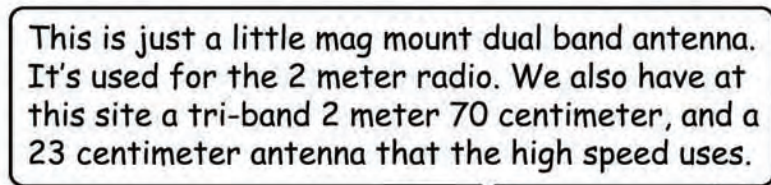
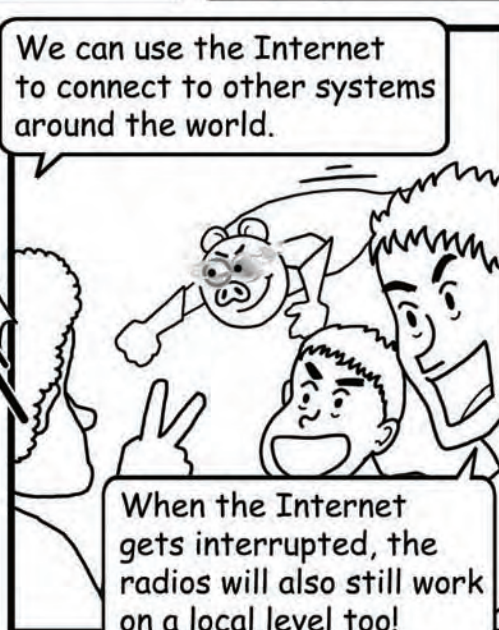
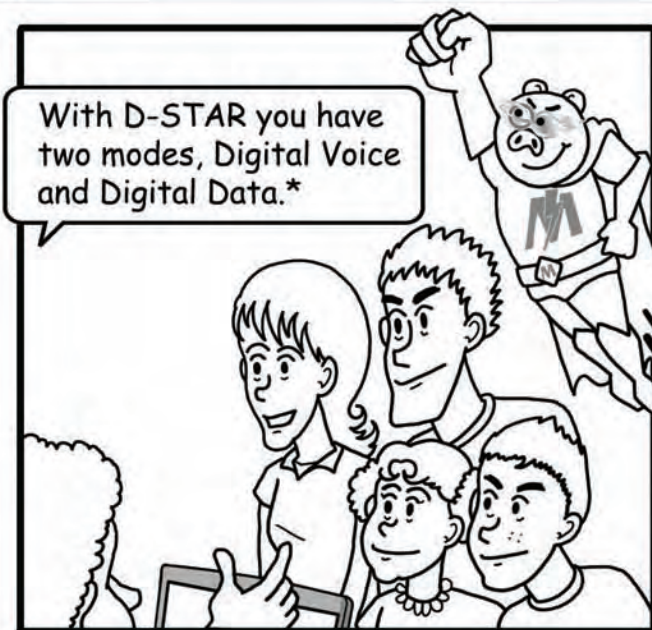
This is KD7QDZ standing by, listening.

Yay!

I'll lead the way!  
INTO THE FUTURE!



# D-STAR Station #4



\* For more information: <http://en.wikipedia.org/wiki/D-STAR>  
<http://www.icomamerica.com/en/products/amateur/dstar/dstar/default.aspx>  
<http://www.icomamerica.com/en/products/amateur/dstar/id1/default.aspx>



Here's the evac center's laptop. We're dropping some files on his hard drive right now. Dan is going to call and let our local EOC\* know what we're doing.

This is KC7SFN, calling KD7QEG, we've dropped the files. Over.

This is KD7QEG, thanks for the files, I see them, 73.

This is KC7SFN, 73.

This must be a big help for the emergency manager...

Yes, it empowers people out in the field, base station operations, and those at the command center.

**Empowerment**

We've read that you can do chat and pass along pictures too right?— with something called "D-RATS"....

What?! A RAT?! Must be a digital one.....

Yes! It's a free EmComm application that you can use with D-STAR. We are using it right now on this laptop.

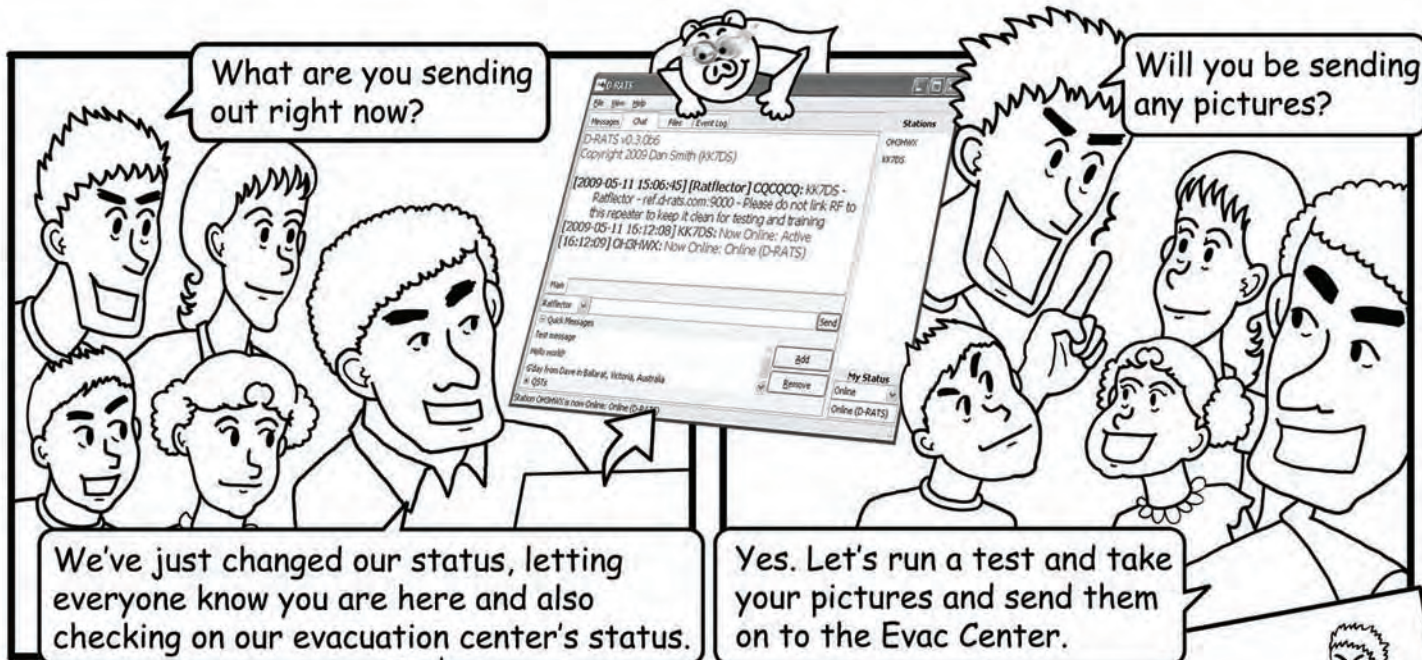
How does it work?

Well, once you download the program and set up the preferences to reveal your call sign, status, location and lots more, you can chat, or do instant messaging, periodic bulletins, send out reports, weather, anything that will be needed in an emergency.

We can even set it up to send messages at regular intervals. They're called automatic QSTs or automatic beacons!

\*EOC: Emergency Operations Controller (emergency manager)







We can use the DD mode to send this data like it would be at an office, IP to IP.\* Or from this radio I can FTP\*\* my files from my computer to the "local" fileserver.

So, let's say we're here in Seattle...

...and we need medications

...and food and blankets

...and supplies

Yes guys, we can send a request directly to the D-STAR radio operator in another area that we know might have more resources...

I see that there is also an event log tab! That's convenient!

That's Empowerment!

How do we see who else is on-line and their status?

Right click somewhere in the Stations window and a sub menu will display. If I click on Ping All Stations, a ping will go out and all stations that are on-line will answer back. Now watch, if I hover the mouse over their callsign, their status and other information will be displayed.

But one question, why...D-RATS?

spell RATS backwards...

S...T...A...R...

\*IP: Internet Protocol  
\*\*FTP: File Transfer Protocol



Is there a map function we can also use?

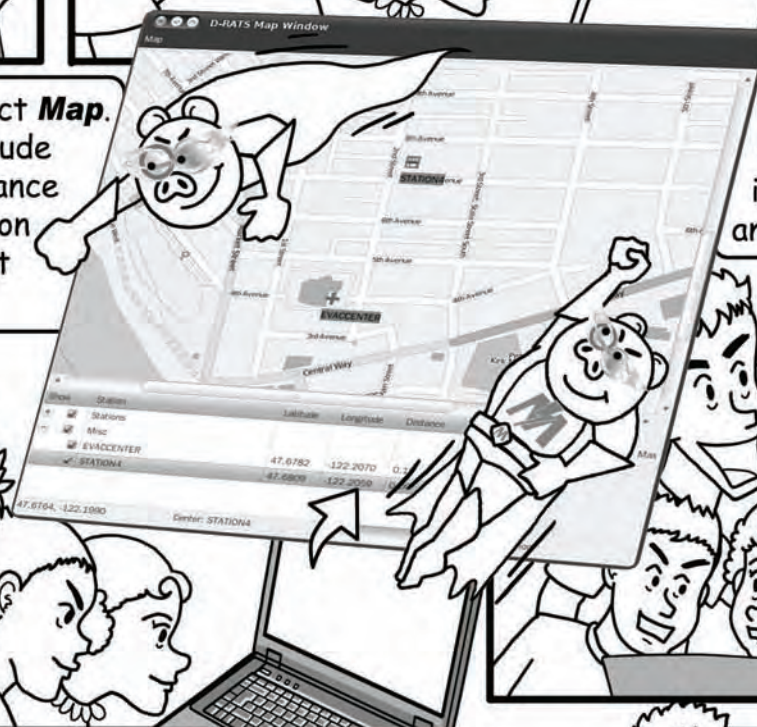
Yes, let's say you want to request the position of a remote station. We can do that. Just right click on one of these callsigns in the Stations window, a sub-menu will come up and now click on **Request Position**. If they are online their coordinates are broadcasted to all connected stations.\*

Let's see that!

Go to **View Menu** and select **Map**. The station name, it's latitude and longitude and the distance and direction to that station from where we are at right now will show up.

Let's all take turns entering in information and making calls!

Yeah!



**Two Hours Pass By**

Attention: 5 minutes left! Everyone proceed to the main station after wrapping up! Meeting in 15 minutes.

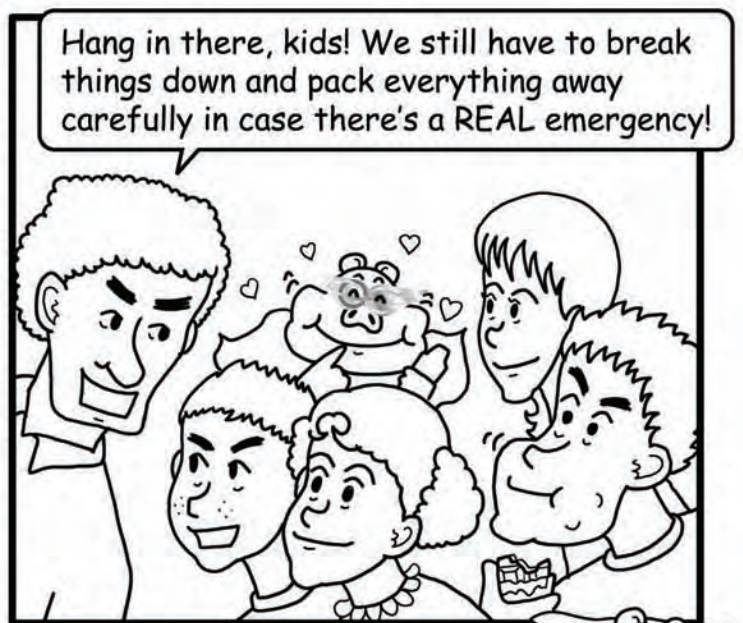
Max looks tired!

I NEED SOME CHOCOLATE!

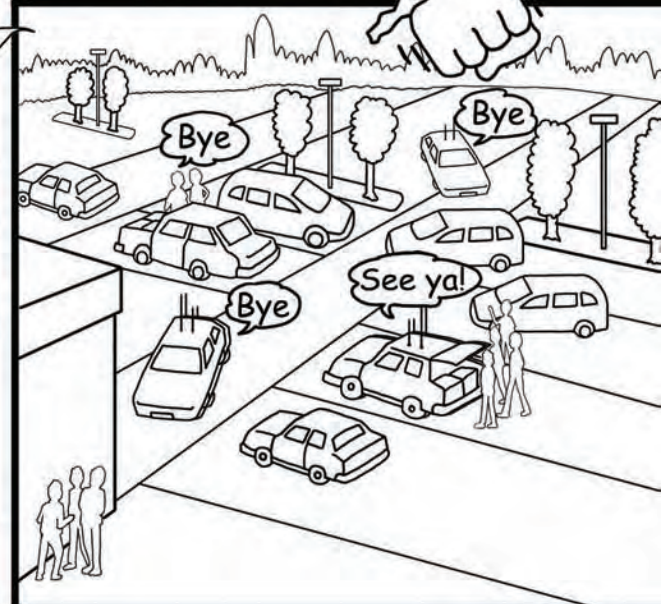
No, he just needs some chocolate!

\*The station has to have its coordinates set up in the GPS part of the program.





Preliminary results were very positive; we'll go over the results in more detail and report back at the next club meeting on how to make things even better.





My dad would like you all to come over for a post-emergency drill BBQ!

Heck yeah! We're starving!

My Dad's cooking.... Now you'll see a real emergency!

Hope they're having chicken

Don't worry Max, I'm sure they'll have something for you too!

**Later**

That meal was great! Zack, your dad's a great cook.

Taught him everything I know!

Cool room, Zack

Um... it doesn't always look like this...

Kids, Zack has had a very long day and is obviously not feeling like himself. It's like space aliens have taken over his brain...

Thanks! I think it's important to always keep a clean room, don't you?

So tell us about Max.

Max and I have been hanging out together as long as I can remember. He's helped me learn a lot about ham radio along the way.



Wow, I've never had a friend like that. I wish I did so I could learn as much about ham radio as you have.



Well, Max is a great friend. And you know what? In fact, I'd appreciate it if you could watch Max for me...



...But you have to promise to take VERY good care of him, every day, and feed him chocolate often.



Gee, think I could borrow Max too?



Yeah! Let's learn more about ham radio together!



We'll watch him! Everyday! He won't get lost with us!



Sure! The more people taking care of Max, the better. And he'll take care of you in return! But be careful, he has a habit of getting lost!

We'll do ham radio together and you can help us remember stuff. Like when I forget Emma's call sign is KD7QEQ or if she forgets mine is KD7QEC!



That's so cool, Zack!



Max is in good hands. Another generation of hams lives on!









